

WORLD'S COLUMBIAN EXPOSITION.

DEPARTMENT OF LIBERAL ARTS.

CIRCULAR NO. 9.

THE BUREAU OF HYGIENE AND SANITATION.



The Bureau of Hygiene and Sanitation of the World's Columbian Exposition has been organized to prepare a collective exhibit illustrative of the present condition of Sanitary Science. A detailed list of the subjects assigned to it will be found hereafter.

Starting from the standpoint that "the common health is the common wealth" and that hitherto Sanitation and Sanitary Science have not received that amount of general public support which their importance demands, the Bureau will seek to set before the visitors to the Exposition such a representation of Sanitary Work and Sanitary Aids as will help to lift the general mind to a higher plane in its estimate of the work of sanitation. Not even the most exaggerative optimist would assert that the sanitary arrangements of our chief and best-cared for cities are perfect, while it is well known that those of smaller towns and villages are of the most reprehensible type. On the other hand the pessimist cannot deny that the last two decades have seen very great and very marked improvements in the theory of Hygiene as a science and in its practice as an art; the "vantage ground" thus gained it is to be hoped will be but a new base from which a more general and complete advance all along the line may be made. That eminent sanitary pioneer, Edwin Chadwick, dared to predict that the

realization of municipal and domestic sanitary reforms would eventually result in the establishment of a death rate of five to seven per thousand in Hygeian districts ; thus every improvement of sanitary measures will be an aid to the fulfillment of Chadwick's vision. The often quoted but never to be forgotten results of sanitation in the city of Munich is an apt illustration of the benefits derivable. When that city was devoid of sewerage and pure water supply the death rate from typhoid fever — preëminently a disease revelling in filth — was 24.20 per ten thousand. The illustrious scientist, Pettenkofer, was consulted, and recommended the establishment of a system of sewerage and the introduction of a water supply from a new source. Upon the inauguration of the new systems the death rate was reduced to 13.30 per ten thousand ; partial progress further reduced it to 9.26 and the completion of the cloacinæ caused the rate finally to fall to 1.75 per ten thousand, at which it has approximately remained.

While much in front of most other countries, the United States with a death rate today of 18 per thousand, has an arduous advance to make, but it is confidently anticipated that among the many brilliant achievements of the World's Columbian Exposition that of advancing the work of Sanitary Reforms will not be the least.

The United States has been the pioneer and is still the leader in so many departments of the world's progress that it can scarcely be too enthusiastic to hope that she may rapidly forge to the front and assert her claim to be the leader in sanitation. Nowhere on the world's face are the enormous piles of masonry so numerous as they are in America, nowhere on the world's face ought the care of public life and health to be so great.

The aim of the Bureau of Hygiene and Sanitation will be to show as adequately as possible the position in which the theory and practice of Hygiene stand at the present day, and it is hoped that the Universities and Colleges, the Boards of Health, State and Municipal, the Societies having Hygiene and Sanitation as their keynotes, the scientists, the physicians, the manufacturers and the public generally will cordially coöperate in the endeavor to make the exhibition worthy of the science and of our country.

Such varied sources will naturally produce varied results. Varied results shown in diverse ways will serve to heighten the

general interest in the one theme. The theme has but one end in view, the improvement of the "common health."

The following is the general classification of the division :

HYGIENE.

Class 825.

Athletic training and exercise gymnasia : an active gymnasium will probably be arranged as an educational exhibit.

Apparatus for gymnasia.

Domestic apparatus for physical development and of gymnastic exercises and amusement.

Special apparatus for training in schools. Gymnasia.

Appliances illustrative of school drill.

Class 826.—Alimentation.

Maps and diagrams of geographical distribution of foods.

Models of foods, in proper and improper conditions for human consumption.

Equivalents and constituents of foods.

Samples, diagrams (and, or) models showing physical and economic values of each kind of food in general use.

Illustrations by models and pictures of foreign and little-known foods, and the modes of manufacture by the natives.

Adulterations of food. Specimens of adulterated foods, articles used as adulterants and diagrams of alimentary and economic loss caused thereby.

Detection of adulterations and apparatus used in analysis.

Models of abattoirs.

Special apparatus and appliances used in the preparation of food, cooking and serving other than those contained in Group 115.

School kitchens and arrangements for school canteens.
Methods of warming children's meals.

Apparatus and appliances for keeping food warm after having been cooked.

Dinner pails and receptacles for carrying meals for school children, workingmen and others.

Models (and, or) diagrams of restaurants, dining halls, refectories, etc.

Economical cookery. Workingmen's and other kitchens.

Apparatus and processes for conserving, storing and conveying fresh foods of all kinds.

Appliances used for preparation of foods.

Diseases due to unwholesome and improper foods.

Drawings and models of animal and vegetable parasites.

Practical dietaries : army, navy, prison and general.

Class 827.—Dwellings, etc.

Buildings or large models of buildings showing :

Defects and unsanitary conditions, as frequently found in houses.

Proper modes of building, draining, ventilating and warming houses on sanitary principles.

Farm house of sanitary but economic construction.

School house of sanitary but economic construction.

Models (and, or) designs of buildings of all kinds in reference to their sanitary qualities, and characterized by the conditions best adapted to health and comfort, including dwellings for workingmen and factory operatives, in connection with large manufacturing establishments, tenement houses, "flats" and suites of apartments, city and country residences, club houses, school houses, improved buildings for elementary schools, infant schools, court rooms, theaters, churches, etc.

Class 828.—Hotels, Lodging Houses, etc.

Class 829.—Public Baths and Lavatories.

Public urinals and closets.

Manufacturers' exhibits of sanitary appliances and methods for dwelling houses, buildings and cities.

Apparatus for heating, lighting and ventilating buildings in their relation to health. Air inlets and outlets.

Cowls, etc.

Models and designs for drains and sewers.

Apparatus and appliances used in connection with domestic sanitation, except those classified in Group 120.

Night soil apparatus, carts and other appliances for the removal of night soil and refuse.

Methods of disposal of sewage and refuse.

Earth and ash closets. Commodes and utilization of sewage ; manufacture of poudrette and other fertilizing materials.

Baths, washing apparatus, detergents, etc., except those classified in Group 120.

Refuse crematories.

Non-poisonous paints and wall-papers, floor coverings, washables, decorations, etc.

Exhibit showing various modes of disposal of the dead in the past and present.

Cremation and desiccation.

Models and designs of aqueducts.

Plans of waterworks, artesian wells, pumping stations, modes of distribution (ancient and modern).

Apparatus for cleansing mains, etc.

Models and designs of reservoirs, filtering beds and associated subjects.

Public drinking fountains ; drinking fountains and troughs for animals, especially in reference to prevention of rabies in dogs.

Filters and other methods of purifying water.

Apparatus for chemical and biological examination of water. Diagrams, etc., of results. Analytical laboratory work.

Illustrations by models and drawings of diseases produced by and conveyed through the impurities of water.

Charts showing the mortality caused by diseases generally referable to impurity of water supply.

Laboratory arranged for bacteriological investigation, in which will be illustrated the modes of preparation of cultivating media ; modes of cultivation of germs, disinfection, etc. Diagrams and illustrations in various forms of bacteria, etc.

Apparatus intended for the prevention of infectious diseases.

Methods, materials and instruments for destroying germs.

Disinfectors and disinfecting apparatus for material, houses, etc.

Disinfectants and deodorants.

Apparatus and fittings for warming, ventilating and lighting schools ; school latrines, closets, etc.

Special school fittings for storing and drying clothing.

Precautions in schools for preventing the spread of infectious diseases ; school sanitarium, infirmaries, etc.

Hygienic Clothing : models, designs and charts, illustrating the comparative value of dress materials for articles of clothing in reference to their hygroscopic and thermic qualities.

Uninflammable clothing.

Sanitary underclothing.

Dresses for bicycling, mountaineering, swimming and athletics.

Dresses for factories, for nurses, etc.

Life-saving dresses.

Firemen's dresses.

Illustrations of deformities produced by dress, boots, tight lacing.

Poisonous and non-poisonous dyes used in the manufacture of clothing.

Illustrations of diseases produced by poisonous dyes.

Charts showing the mortality caused by infectious diseases in children.

Class 830.—Hygiene of the workshop and factory.

Models and designs of workshops and factories.

Models and designs of improvements in the arrangement and construction of workshops, especially those in which dangerous or unwholesome processes are conducted.

Apparatus and fittings for preventing or minimizing the danger to health or life from carrying on certain trades.

Guards, screens, air-jets, preservative solutions, washes.

Protective objects for personal use : mouthpieces, spectacles, hoods, etc., for the use in certain unhealthy and poisonous trades.

Ventilation of workshops : by simple discharge of internal air ; by destroying offensive or injurious quality of discharged air.

Removal of effluvium nuisances : by condensing and utilizing vapor ; by consuming vapor ; by other means.

Removal of dust nuisances in certain trades.

Prevention of danger from infectious diseases that may arise in wool-sorting, rag-picking, etc.

Prevention of accidents in workshops, factories, mines and elsewhere.

Other inventions or improvements for ameliorating the condition of life of those engaged in unhealthy occupations.

Means for economizing human labor in various industrial occupations.

Illustrations of diseases and deformities caused by unwholesome trades and professions ; methods of combating these diseases ; preservative measures, etc.

Meteorology in connection with Hygiene.

Diagrams, models and apparatus illustrative of the climatal conditions prevailing in various parts of the world ; the climatal relations between health and disease ; rainfall, percolation and flow from the ground, etc.

Illustrations and charts relative to the beneficial effect of certain climates upon certain diseases.

Class 833.—Protective Supervision.

Sanitary supervision ; vaccination and its enforcement ; isolation of infectious diseases ; quarantine ; prevention and elimination of animal epidemics.

Models and designs of quarantine establishments ; quarantine ships ; disinfecting vessels, etc.

Models, charts and diagrams, showing the work of the various State Boards of Health in the prevention of mortality and sickness from infectious preventable diseases ; results of isolation and disinfection in comparison with lack of either or both.

Food Inspection : treatment of adulterated foods ; food inspection ; special milk inspection ; treatment of stale food substances ; regulation of abattoirs, mills, etc.

Regulation of sale of horses and cattle ; protective devices, etc.

Building Inspection : building regulations and inspection.

Fire regulations.

Charts of fire statistics.

Personal Inspection : color tests, etc. ; professional examination for licenses, etc.

Immigration : reception, care and protection of immigrants.

Control of immigration in so far as sanitation is concerned.

Formation of a library of reference to consist of Home and Foreign National Reports on Hygiene, Sanitation and kindred subjects. Reports of State Boards of Health, City Boards of Health and Sanitary and Hygienic Associations throughout the world. Publishers' books on Hygiene, Sanitation and cognate subjects.

The Bureau will arrange as far as possible for the presentation by exhibitors of models of sanitarily built and equipped dwelling-houses, urban and rural ; farmhouses ; schoolhouses ; public lavatories, closets and urinals ; crematories for the dead ; crematories for garbage, etc. If any of those subjects should be left unrepresented by exhibitors, the Bureau will endeavor to supply the deficiency by placing adequate illustrations in the shape of models and designs before the visitors to the Exposition.

It will also exhibit scientifically arranged laboratories for the prosecution of bacteriological research, and of hygienic analytical investigations.

It will seek to supplement the valuable labors of the Boards of Health and of Sanitary Societies by codifying and collectively tabulating the results of their work.

Food and food adulterations will receive special attention, and it is desired that a complete illustration of those important subjects may be obtained.

The great problems of potable water supply, drainage and sewerage, ventilation and heating will all be duly cared for, and it is hoped that municipalities, companies and associations, as well as individual exhibitors engaged in those departments of sanitation, will aid in the efficacy and interest of the division by displaying models and illustrations of their work.

STATE BOARDS OF HEALTH.

The State of Boards of Health are asked to prepare the following :

Charts showing the mortality statistics of their state.

Charts showing the morbidity statistics of infectious diseases.

Charts showing the effect of isolation and disinfection in prevention or minimization of disease, and any other charts, diagrams, models, etc., that may be deemed desirable.

ASSOCIATIONS AND SOCIETIES.

Associations and Societies engaged in sanitary work of any kind are solicited to have their aims and results represented by models, illustrations, charts, etc. During the last decade much improvement has been wrought in the welfare of the denizens of our crowded cities by the labors of many philanthropic bodies, and the women of this and other countries have, as usual, been amongst the foremost to appreciate the value of sanitary measures and to stimulate their enforcement by the various authorities. It is anticipated that this portion of the division will not be, by any means, the least interesting and instructive.

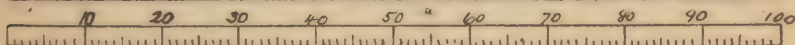
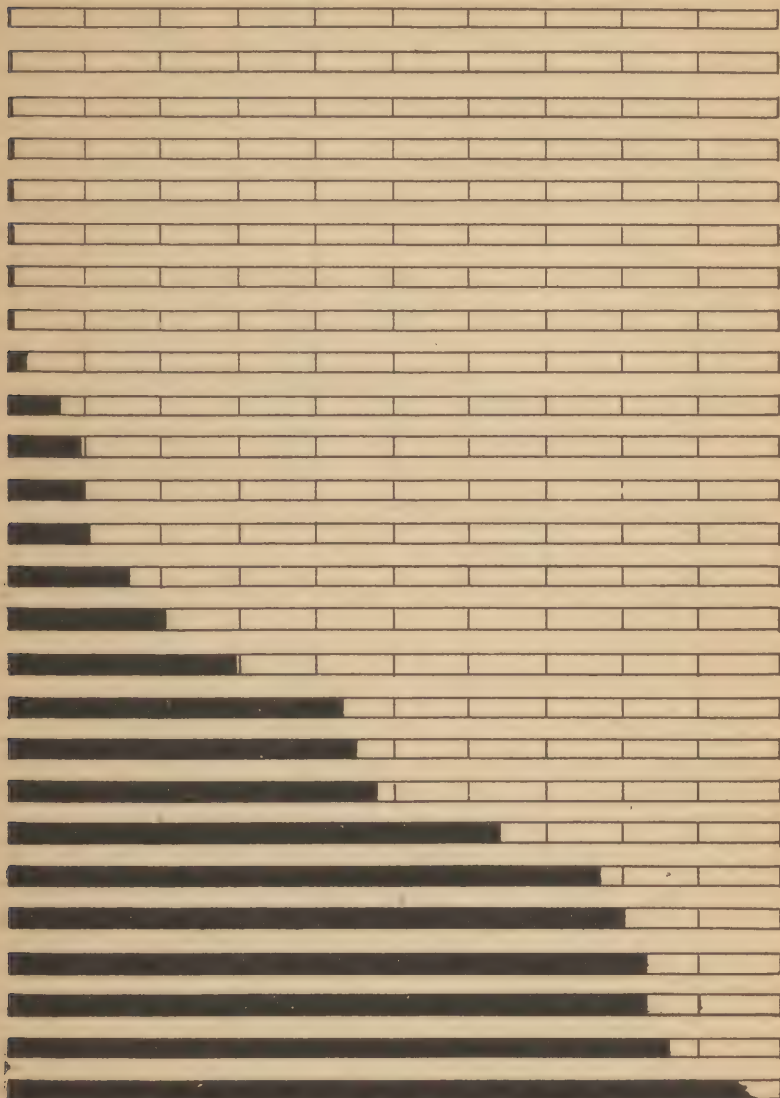
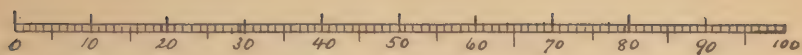
MAPS AND CHARTS.

It will be most desirable, for the convenience of hanging them without loss of much required space, that all maps, charts and diagrams exhibited by state boards of health, and associations and societies, shall all be of uniform dimensions. It is suggested that all state maps shall be drawn on the scale of four miles to the inch, excepting those states the area of which is very large; for those it will be desirable to reduce the scale, whereas for the small, but densely populated states, a more liberal scale may be chosen. The map should show the more important natural features, coasts, mountains, rivers and the railways and larger towns. The counties may be shown by shaded outlines.

It is recommended that charts and diagrams be prepared of a uniform size on cardboard sheets of 22 by 28 inches, so that they be readily inserted into frames which should measure 24 by 30 inches. On page 13 will be found an illustration showing a standard carrying a frame. The frames are glazed on both sides so as to allow two charts to be exposed to view in each frame.

The above suggestions are recommendatory only, but it will be obvious that similarity of size will simplify considerably both the labor of installation, and the convenience for reference.

It is further recommended that the graphic mode of representing percentages be adopted; the accompanying illustrations will show a desirable form, but it would be advantageous to attach to the graphic form the actual figures of the percentages.



LIBRARY.

The Bureau desires to form a library which shall represent as fully as possible all the phases of hygiene and sanitation.

To accomplish this object, all the State Boards of Health and their auxiliary local boards of health are asked to contribute copies of all their reports and other publications bound in suitable substantial binding, and lettered on the back with the name of the State (in the case of an auxiliary board, with also the name of the city or other district) and the date of the report. Publications other than reports should be lettered "Publications yearsto"

Forms, notices or circulars used in the work of the Board should be bound in a separate volume, to be lettered "Forms, etc."

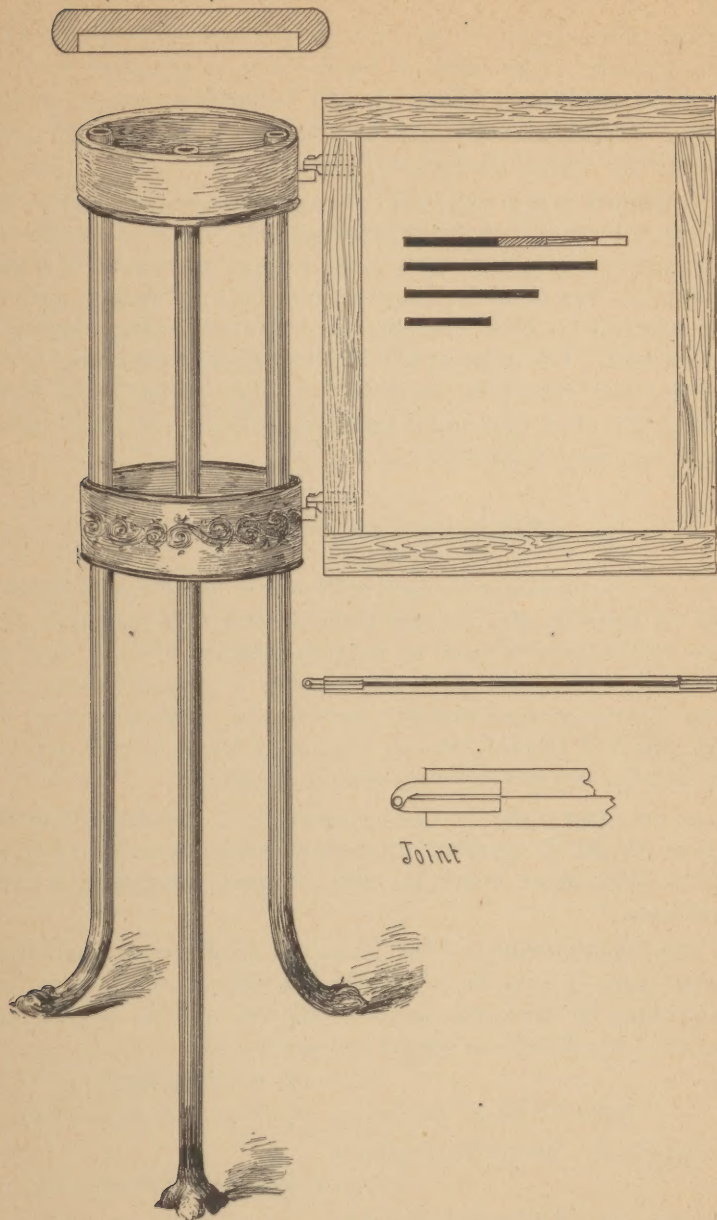
Sanitary Associations and Societies are asked to contribute their reports and publications bound in a similar manner.

Authors and publishers also are asked to send a copy of such works as they have published on hygiene, sanitation and cognate subjects. The books should all be lettered on the *back* with the title, name of author, name of publisher, date of publication and publication price.

FOREIGN COUNTRIES.

The suggestions and invitations made in this bulletin are intended to be also fully applicable to all other countries; therefore the Commissioners representing the Governments, and the representatives of sanitary science in all nations are cordially asked to accord to the division their valued coöperation.

Cap to cover top and Fasten.



[This cut shows a design for a standard carrying wing frames. The frame to be 24 by 30 inches ; to hold cards 22 by 28

inches. The center of the frame to be five feet from the floor. The standard to be made of metal ; rods of gas-pipe ; rings 16 inches in diameter. The frames to be one inch thick, of hard wood. The stand will carry 50 frames, or 100 diagrams, and will occupy a space six feet in diameter.]

Inasmuch as it is expected that no individual exhibitor in this Bureau will require an entire standard, and as the standards can be more economically manufactured in large quantities, it is proposed that they shall be manufactured by this Bureau, and the cost assessed on each exhibitor in proportion to the number of frames used. The expense will be about \$3 for each frame, which includes two exhibition surfaces, i. e., one on each side of the frame. All other expense of installing exhibits will be borne by the Columbian Exposition.

APPLICATIONS FOR SPACE.

It will be necessary for each exhibitor to make formal application for space to the Director-General, and it is requested that these applications be made as early as possible, in order that the Department of Liberal Arts may be able to prepare an estimate of the amount of room that will be required. On addressing the Department of Liberal Arts at Chicago, a blank form of application will be sent to exhibitors without delay.

In all cases where foreign countries have appointed Commissioners for the Columbian Exposition, applications for space for exhibits from those countries must be made through such Commissioners.

The Superintendent of the Bureau of Hygiene and Sanitation invites from experts in any of the branches of the science any suggestions or recommendations that will aid in making the exhibit of the division complete and serviceable.

F. W. BREWER,

Superintendent Bureau of Hygiene and Sanitation.

Approved : SELIM H. PEABODY,

Chief, Department Liberal Arts.

Approved : GEORGE R. DAVIS,

Director-General.

